



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,283	08/28/2001	Christopher J. Bradford	IN-5520	8390

26922 7590 06/25/2003

BASF CORPORATION
ANNE GERRY SABOURIN
26701 TELEGRAPH ROAD
SOUTHFIELD, MI 48034-2442

EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 06/25/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,283

Applicant(s)

BRADFORD ET AL

Examiner

Susan W Berman

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 67.
- 4) ☐ Interview Summary (PTO-413) Paper No(s).
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1711

Terminal Disclaimer

The terminal disclaimer filed on 05-06-2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration dates of copending Application Nos. 09/941,118, 09/940,748, and 09/941295 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Election/Restrictions

Applicant's election without traverse of Group I in Paper No. 9 is acknowledged.

Claims 22-32, drawn to a non-elected invention, have been canceled.

Response to Amendment

The rejection of claim 4 under 35 U.S.C. 112, first paragraph, is withdrawn in response to amendment of claim 4. The rejections of claims under 35 U.S.C. 112, second paragraph, are withdrawn in response to the amendments submitted 05-06-2003.

Response to Arguments

Applicant's arguments filed 05-06-2003 have been fully considered but they are not persuasive.

Lahrman et al clearly teach single compositions comprising a UV curable component and a thermally curable component. See column 7, lines 6-11, for example. Motivation to include non-radiation curable binders and polyisocyanates is found in the references. See column 6, lines 43-54, column 6, line 65, to column 7, line 5.

Applicant argues that Sirkoch et al do not teach control of the UV/TH ratio. This argument is not found persuasive because Sirkoch et al teach weight percents in claims 8-10 that overlap the instantly claimed ratio.

Art Unit: 1711

Applicant argues that DE '141 does not teach the instantly claimed UV/TH ratio. This argument is not persuasive for the following reasons. DE '141 teaches weight ratios of UV curable components and thermally curable components in the Example that suggest the instantly claimed UV/TH weight ratio. Applicant has not pointed to any evidence to show that the instantly recited UV/TH ratio provides unexpected results.

The rejection over DE '333 is withdrawn in response to applicant's argument that the document is not prior art because the German application was filed 03-21-22001 and the PCT application was filed 03-21-2002.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lahrman et al (5,425,970) teach that the radiation curable binders in the disclosed compositions can contain further functional groups accessible to chemical crosslinking and that external crosslinking agents can be added. Binders not susceptible to radiation curing and providing a non-radiation-induced curing reaction through functional groups, such as hydroxyl, oxirane or isocyanate, may also be added. The reference specifically teaches adding a binder not susceptible to radiation curing, exemplified by a hydroxyl-functional binder such as an acrylic polymer having hydroxy groups and a polyisocyanate curing agent. See column 5, line 4, to column 7, line 11. Lahrman et al disclose, in Example 6, a composition comprising a urethane acrylate containing hydroxyl functional groups corresponding to applicant's component (a1) and also to

Art Unit: 1711

applicant's component (a2), acrylate-functional monomers and a polyisocyanate curing agent corresponding to applicant's component (a3) that is irradiated and then heated to provide a high gloss surface.

Lahrman et al teach compositions that may comprise components corresponding to each of (a1), (a2) and (a3) set forth in instant claim 1. Example 6 shows a composition comprising a radiation curable urethane acrylate having hydroxyl functional groups in combination with a polyisocyanate and discloses dual cure of the composition. Lahrman et al teach adding a non-radiation sensitive binder to the disclosed compositions, thus providing applicant's component (a2). Lahrman et al do not require employing a radiation curable prepolymer containing further isocyanate-reactive functional groups or selecting a polyisocyanate as the external crosslinking agent or including a non-radiation curable binder having functional groups reactive with the isocyanate groups. However, It would have been obvious to one skilled in the art at the time of the invention to provide a composition comprising components corresponding to instantly claimed (a1), (a2) and (a3) selected from the prepolymers and crosslinking agents, as taught by Lahrman et al. It would further have been obvious to one skilled in the art at the time of the invention to include a non-radiation curable binder containing functional groups reactive with a polyisocyanate, as taught by Lahrman et al in column 6, lines 43, to column 7, line 5, of the disclosure because a polyisocyanate is used as crosslinking agent in Example 6. One of ordinary skill in the art at the time of the invention would have been motivated by the teaching of Lahrman et al to provide a composition curable by radiation and heat to provide an initial gel and avoid sagging on lacquer coated vertical surfaces or to allow flash off of solvents, as taught in column 7, line 44, to column 8, line 34.

Lahrman et al do not mention a ratio corresponding to "UV/TH" set forth in instant claim 1. However, the compositions disclosed would be expected to provide the UV/TH ratio set forth in the instant claims in the absence of evidence to the contrary because the compositions comprise the kinds of functional groups set forth in the instant claims and disclose curing the disclosed compositions with UV

Art Unit: 1711

radiation and thermal postcuring. Alternatively, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio of UV curable groups to thermally curable groups required to obtain the desired degree of crosslinking in the cured product. With respect to claims 11-14, Lahrman et al do not teach the instantly claimed ratio of NCO groups to isocyanate reactive groups. However, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio required in order to obtain the extent of crosslinking desired for a particular application because chemical crosslinking of isocyanate groups and isocyanate reactive groups is well known in the art. With respect to claims 15-21, Lahrman et al do not mention the polydispersity of the non-radiation curable binder, however, It would have been obvious to one skilled in the art at the time of the invention to select thermally curable binder components having these features in order to avoid yellowing upon irradiation and to control the amount of crosslinking.

Claims 1-5, 8-14 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirkoch et al (4,634,602). Sirkoch et al disclose dual curable compositions comprising a radiation sensitive compound, a radiation insensitive compound containing hydroxyl groups and a crosslinking agent selected from aminoplast resins and blocked isocyanates and a reactive diluent. The radiation sensitive compounds disclosed include ethylenically unsaturated polyurethanes having hydroxy functional groups (columns 2-6). See column 2, lines 46-50, column 3, lines 10-14, lines 52-56 and column 6, lines 15-19. The radiation insensitive compounds disclosed are epoxy resins or phenoxy resins containing at least 40% aromatic ring moieties (columns 7-8). Sirkoch et al teach partially curing the primer composition with radiation, applying a topcoat composition and thermally curing the composite (see Examples 5C, 6 and 7B).

Sirkoch et al do not mention a ratio corresponding to "UV/TH" set forth in instant claim 1. However, the compositions disclosed would be expected to provide the UV/TH ratio set forth in the

Art Unit: 1711

instant claims in the absence of evidence to the contrary because the compositions comprise the kinds of functional groups set forth in the instant claims and disclose curing the disclosed compositions with UV radiation and thermal postcuring. Alternatively, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio of UV curable groups to thermally curable groups required to obtain the desired degree of crosslinking in the cured product. With respect to claims 11-14, Sirkoch et al do not teach a required ratio of isocyanate groups to reactive functional groups in the disclosed compositions, however, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio required in order to obtain the extent of crosslinking desired for a particular application because chemical crosslinking of isocyanate groups and isocyanate reactive groups and the effects thereof are well known in the art. With respect to claims 18-21, Sirkoch et al do not teach the polydispersity of the radiation insensitive compounds, however, It would have been obvious to one skilled in the art at the time of the invention to select thermally curable binder components having these features in order to avoid yellowing upon irradiation and to control the amount of crosslinking.

Claims 1-5, 8-14 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE Patent 99 141 (translation supplied by applicant). DE '141 discloses compositions for SMC and BMC coating comprising component (a1) corresponding to instantly claimed component (a1), component (a2) corresponding to instantly claimed component (a3) and component (a7) corresponding to instantly claimed component (a2). The same tradenamed materials are employed as disclosed in the instantly claimed invention. The compositions disclosed would be expected to provide the UV/TH ratio set forth in the instant claims in the absence of evidence to the contrary because the compositions comprise the kinds of functional groups set forth in the instant claims and disclose curing the disclosed compositions with UV radiation and thermal postcuring.

Art Unit: 1711

Alternatively, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio of UV curable groups to thermally curable groups required to obtain the desired degree of crosslinking in the cured product. With respect to claims 11-14, DE '141 does not specifically teach the recited ratio of isocyanate groups to isocyanate-reactive functional groups in the disclosed compositions, however, It would have been obvious to one skilled in the art at the time of the invention to determine the ratio required in order to obtain the extent of crosslinking desired for a particular application because chemical crosslinking of isocyanate groups and isocyanate reactive groups and the effects thereof are well known in the art. With respect to claims 18-21, DE '141 does not mention the polydispersity of component a7, however, It would have been obvious to one skilled in the art at the time of the invention to select thermally curable binder components having these features in order to avoid yellowing upon irradiation and to control the amount of crosslinking.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 703 308 0040. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703 308 2462.

The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.



Susan W Berman
Primary Examiner
Art Unit 1711

SB
June 19, 2003